

We claim:

1. A method for forming splines on a metallic tube, comprising the steps of:
 - (a) providing a metallic tube having properties corresponding to T4 temper;
 - (b) heating said metallic tube to a temperature sufficient to remove the T4 temper;
 - (c) quenching said metallic tube;
 - (d) forming splines on said metallic tube; and
 - (e) artificially aging said metallic tube.
2. The method of claim 1 in which (a) includes providing an aluminum alloy selected from the 2000, 5000, 6000, or 7000 series.
3. The method of claim 1 in which (a) includes selecting an alloy selected from the group consisting of 6013, 6061 and 6063; 7003, 7108 and 7029.
4. The method of claim 1 in which (a) includes providing tube formed by extrusion
5. The method of claim 1 in which (a) includes providing a drawn seamless tube.

6. The method of claim 1 in which (a) includes providing a tube formed from an elongated sheet product that is rolled in a circular configuration and then welded to form a tube.

7. The method of claim 1 in which (b) includes heating said metallic tube to a temperature between about 650° to about 1,000°F.

8. The method of claim 1 in which (b) includes heating said metallic tube in an electric induction furnace.

9. The method of claim 1 in which (b) includes heating said metallic tube in an induction coil.

10. The method of claim 1 in which (b) includes heating a said metallic tube in an induction coil that covers at least 90% of the length of said metallic tube.

11. The method of claim 1 in which (b) includes rotating said metallic tube during the heating process.

12. The method of claim 1 in which (b) includes heating only a section of said metallic tube.

13. The method of claim 1 in which (b) includes heating two or more sections of said metallic tube and there is a non-heated section between said two or more sections.

14. The method of claim 1 in which (c) includes quenching said metallic tube.

15. The method of claim 1 in which (c) includes quenching said metallic tube to temperatures approaching and to room temperature.

16. The method of claim 1 in which (c) includes quenching said metallic tube in a tank having a temperature less than about 212°F.

17. The method of claim 1 in which (c) includes quenching said metallic tube includes immersion quenching, spray quenching and mist quenching.

18. The method of claim 1 in which (c) includes quenching said metallic tube using a quenchant solution selected from the group consisting of water, polymer, air, gaseous quenchants and combinations thereof.

19. The method of claim 1 in which (d) includes forming said splines within 16 hours of said quenching if said metallic tubes are stored at room temperature.

20. The method of claim 1 in which (d) includes forming said splines within 8 hours of said quenching if said metallic tubes are stored at room temperature.

21. The method of claim 1 in which (d) includes cooling said quenched metallic tube below room temperature to retard natural aging.

22. The method of claim 1 in which (e) includes aging said tube at a temperature of at least 300°F for at least 5 hours.